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The Green-Striped Mapleworm

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The green-striped mapleworm (*Anisota rubicunda* (Fab.)), a native of North America, is distributed widely throughout the eastern half of the United States and the southern parts of adjacent Canadian Provinces. Its southern range extends from the Carolina coast to the gulf coast in Alabama and Mississippi. It has been recorded as far west as Nebraska and Kansas.

The insect causes heavy defoliation throughout its range but is most destructive near its southwestern limits.

Hosts and Injury

Soft and hard maples of all kinds are voraciously attacked by the green-striped mapleworm. It defoliates boxelder, too, as well as several species of oak, particularly when they are mixed with or adjacent to maple stands. Both naturally seeded and ornamental trees are attacked.

The larvae devour the entire leaf blade. Heavy infestations often cause complete defoliation on large acreages. Where two generations of the insect are produced in 1 year, the trees may be completely defoliated twice in the same season. Most of the hosts can withstand two or three complete defoliations without permanent damage, so artificial control is usually not essential the first season.

This insect is associated frequently with other species of hardwood defoliators, particularly the saddled prominent (*Heterocampa guttivitta* (Walker)). Both species are active during the same part of the season and have been known to defoliate large stands in a short period of time.

Description

The newly oviposited egg is round and slightly flattened, pale green, and about 1 mm. in diameter. As the egg ages, the developing embryo can be observed through the thin shell. After the larva emerges, the eggshell is transparent and colorless.

The young larva is yellow, tinged with pale green. At first its head is black, and its body is covered with prominent black spines. The fully grown larva is about 1½ to 2 inches long and very colorful. The head is cherry red, and the body is a pale yellow green with seven dark green or nearly black lines running its entire length (fig. 1, *A*). Two prominent, slender horns are noticeable on the second thoracic segment, and two rows of

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short spines can be found on each side of the body. Four larger spines are present on the terminal abdominal segments. Other distinguishing marks are rose-colored areas on the sides of the two rear abdominal segments. The larva generally becomes dark brown, overall, just before pupation.

The pupa is about 1 inch long, hard shelled, and uniformly dull dark brown (fig. 1, *B*). Parts of the thorax and the margins of the abdominal segments are armed with short spines. The anal segment terminates in a forked projection.

The moth has a wingspread of 1½ to 2 inches. The dorsal side of its woolly body is yellow; the ventral side and legs are rose pink. Each forewing is rose pink on the inner and outer border with a yellow band between (fig. 1, *C*). The hind wings are usually pure yellow, but each may contain a faint rose-pink streak. Several color variations, however, have been recorded. In some varieties the rose pink on the forewings predominates, reducing the yellow to a narrow band. The opposite may occur, the yellow band predominating. In the rare form known as *Anisota rubicunda sperryae* Bower, the coloration is similar, but some pink scales are scattered throughout the yellow areas. In the variety known as *A. alba*, the yellow areas are replaced by white.

Life History and Habits

In the northern part of the mapleworm's range, one generation a year is normal, but a partial second generation, comprising only a small number of insects, may develop. The moths emerge from pupal cells in the soil during June. Each female lays about 150 eggs in clusters of 40 or more on the undersides of leaves. The larvae hatch 8 to 10 days later and feed upon the foliage of the host. The larvae may be abundant on the foliage, but they do not feed in colonies. When fully grown, after about 4 weeks, development, the larvae move to the soil or duff and form cells in which they overwinter as pupae.

In the South, two generations a year are common. The moths emerge and lay eggs in May or early June. The larvae from these eggs are found throughout June and early July. They move to the soil when fully grown and form pupal cells. After 2 weeks in the soil as pupae, the adult insects emerge and lay the eggs for the second generation. The second generation larvae hatch about 8 to 10 days later and feed for 4 to 5 weeks. These larvae may be found from August to October. The pupae of this generation overwinter in cells in the soil.

Natural Control

Several species of birds have been observed feeding on the larvae. Bird predation, however, seems to have no appreciable effect on a rapid mapleworm population buildup.

A few parasites have been reared from the larvae. The wasplike insect, *Hyposoter fugitivus*, and the fly, *Achaetoneura frenchii*, are two examples. But neither has become abundant enough to cause adequate reduction of green-striped mapleworm population.

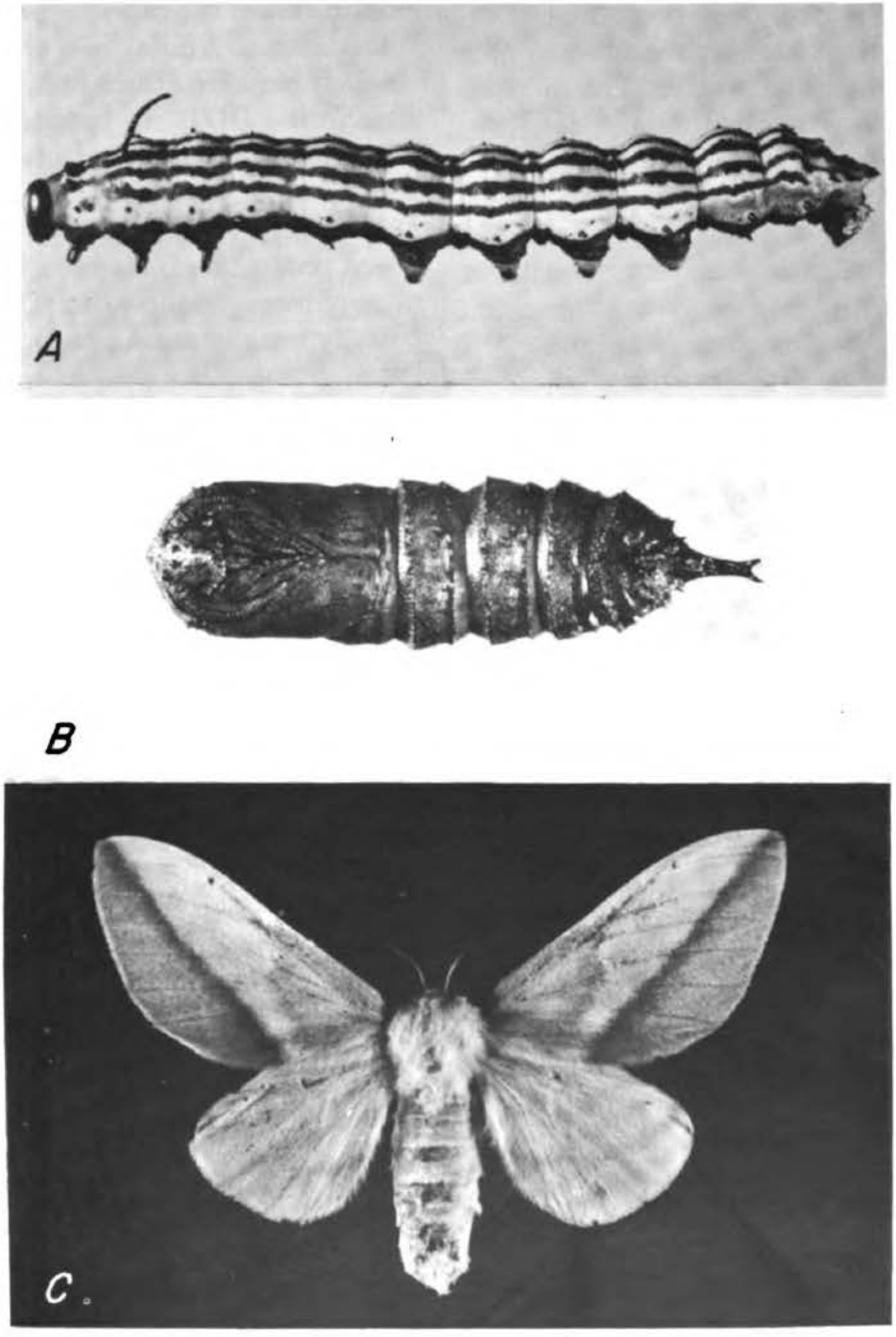

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FIGURE 1.—The green-striped mapleworm: *A*, Fully grown larvae (X2); *B*, pupa (X3); and *C*, adult (X2).

Direct Control

Localized infestations can be controlled by a spray formulation containing 6 level tablespoons of DDT (25-percent emulsion concentrate) in 5 gallons of water. The mixed solution is applied to the foliage with a hydraulic or knapsack sprayer. Spraying should be done in June when the larvae are small. Two applications may be necessary in areas where two generations occur in the same year. Do not use formulations that require oil solvents in hydraulic or knapsack sprayers, since the oil may injure the foliage or the cambium of the twigs.

The larvae can be controlled effectively in large, accessible areas through the use of mist blowers. An effective mist blower formulation contains 2 pounds of 50-percent wettable powder DDT mixed in 100 gallons of water. Very large or remote areas are generally treated from aircraft. A DDT-in-oil solution may be safely sprayed from aircraft at the rate of 1 pound DDT (technical grade) in a gallon of fuel oil per acre of infested area.

Caution: DDT is poisonous. Follow directions and heed precautions given on containers. Store DDT, plainly labeled, away from all food products. In forest spraying, avoid overdosing with DDT, especially near streams, ponds, and lakes.

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